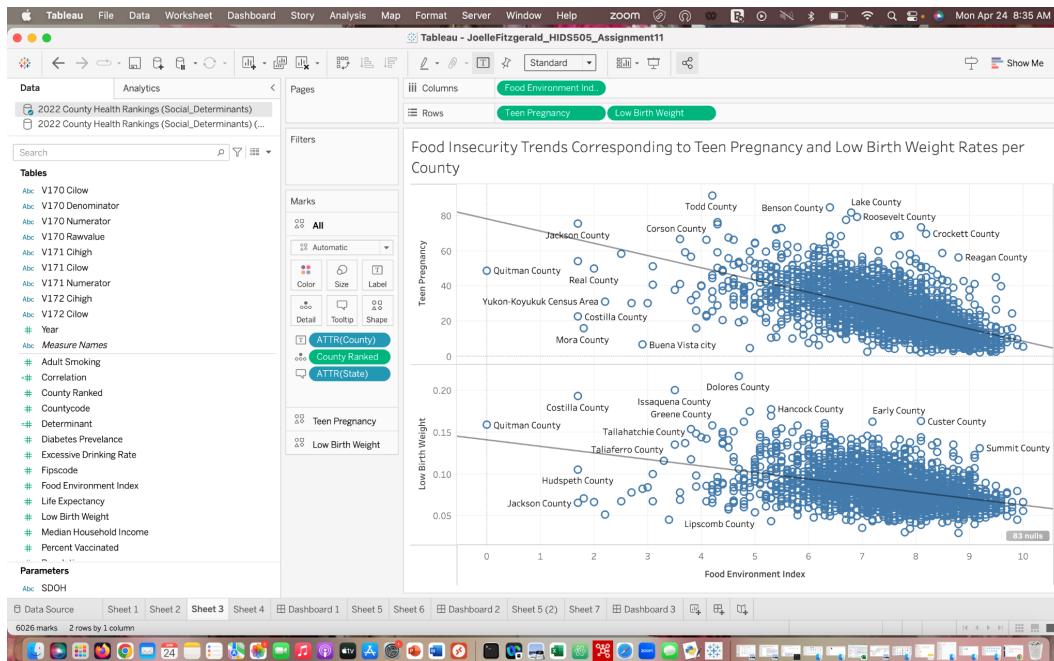
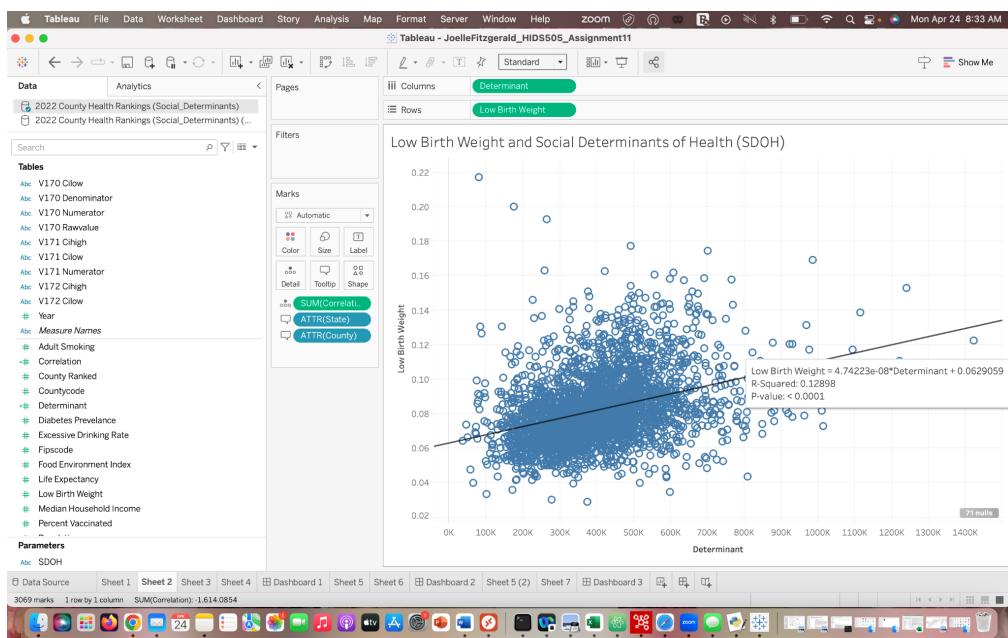
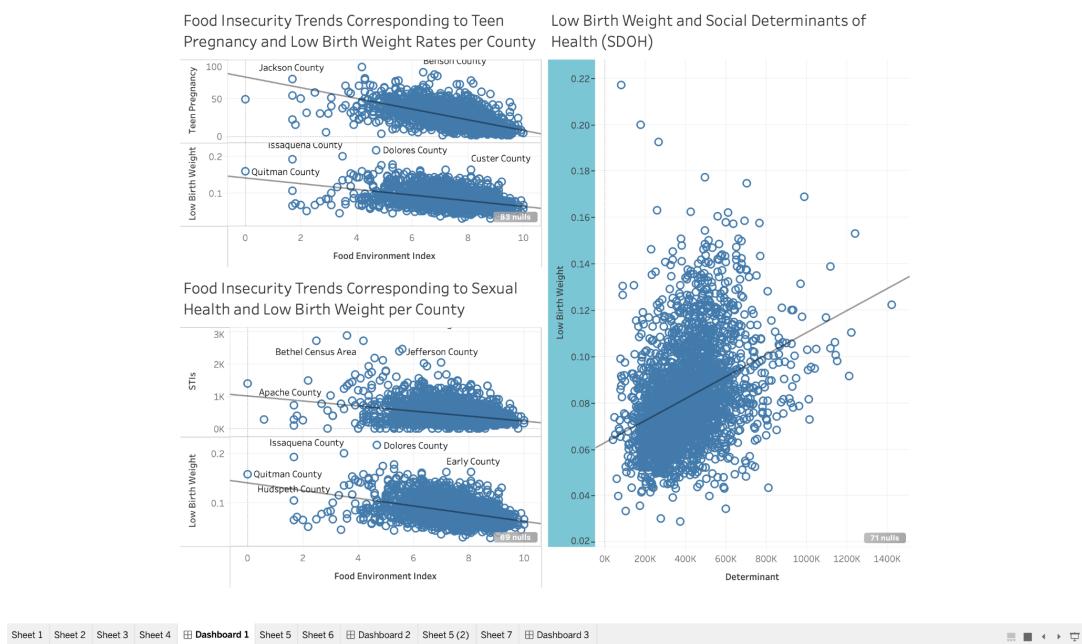
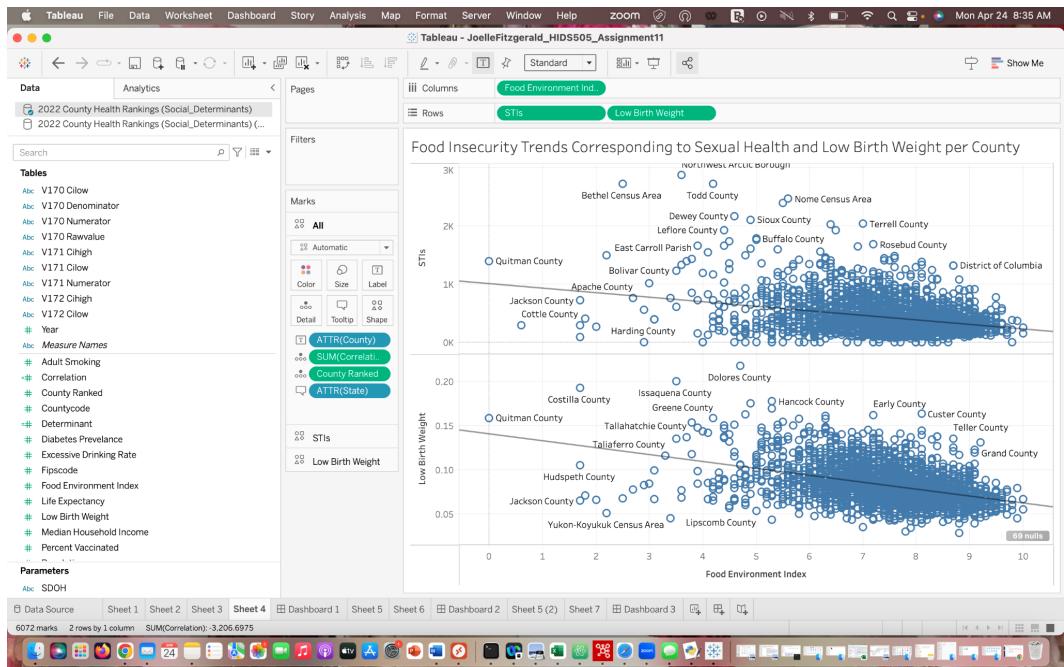


Joelle Fitzgerald
HIDS 505 Assignment 11

- Create 3 Dashboards (or more if you want) - explain the purpose of each.
- At least one of the dashboards should use both data sources (correlated SDOH and Synthea)
- Submit snapshots of your analysis with a description and your Tableau file.

Dashboard 1 -
Sexual Health related to Food Insecurity: A Trend Analysis of United States Counties





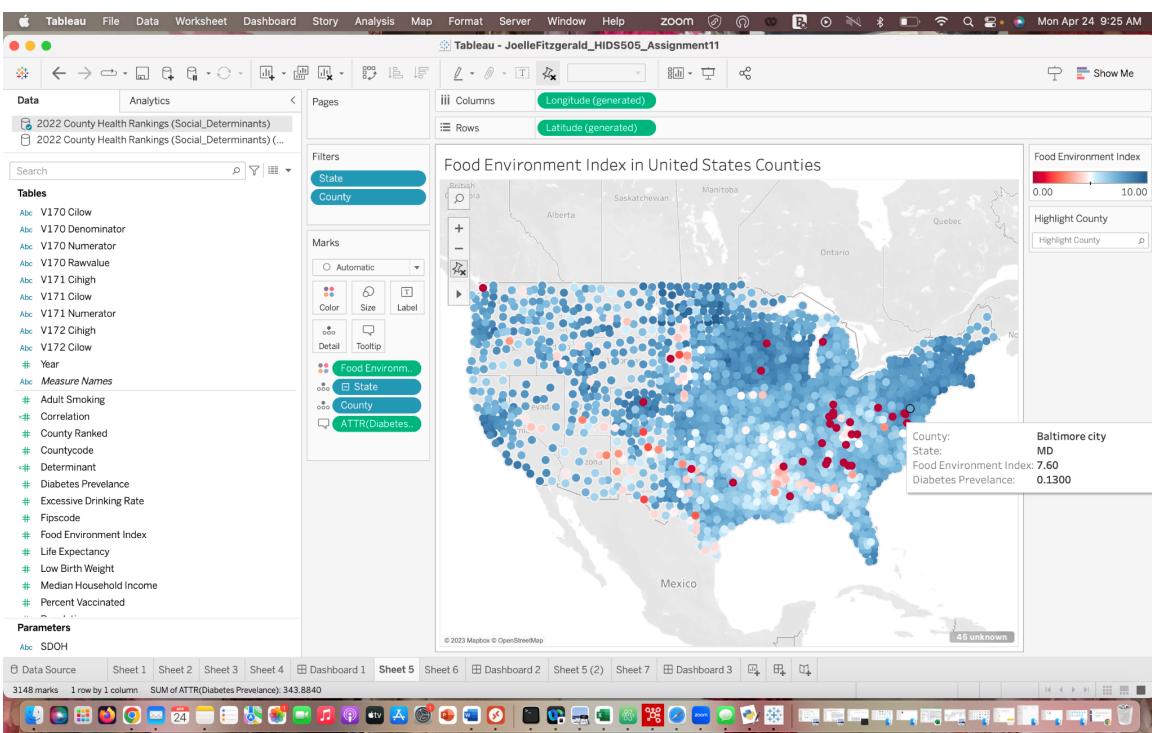
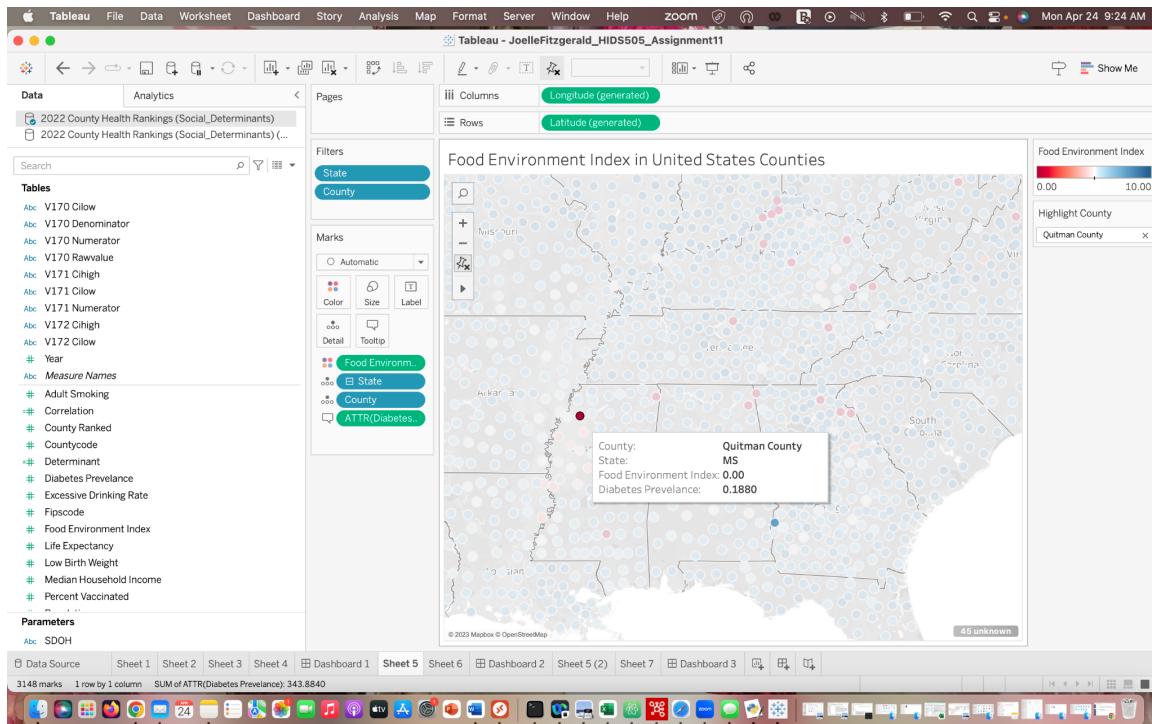
According to the University of Wisconsin Population Health Institution and Country Health Rankings, high risk sexual practices such as unsafe sex and higher numbers of lifetime sexual partners can lead to sexually transmitted infections (STIs) and unplanned pregnancies, which can affect immediate and long-term health as well as the economic and social well-being

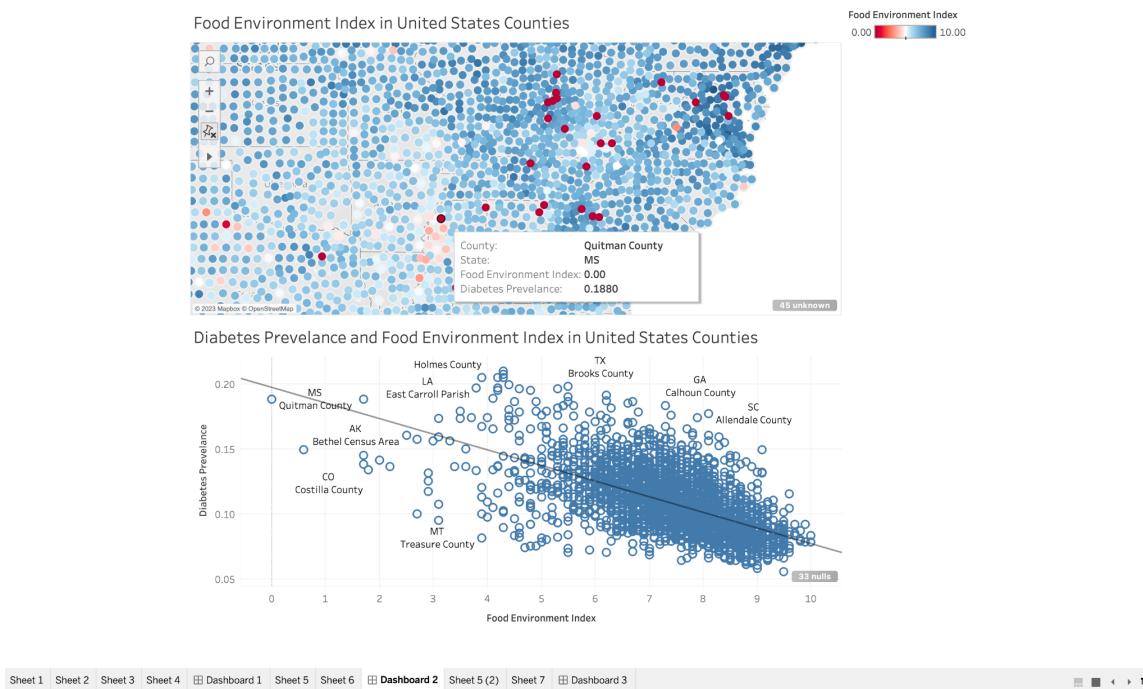
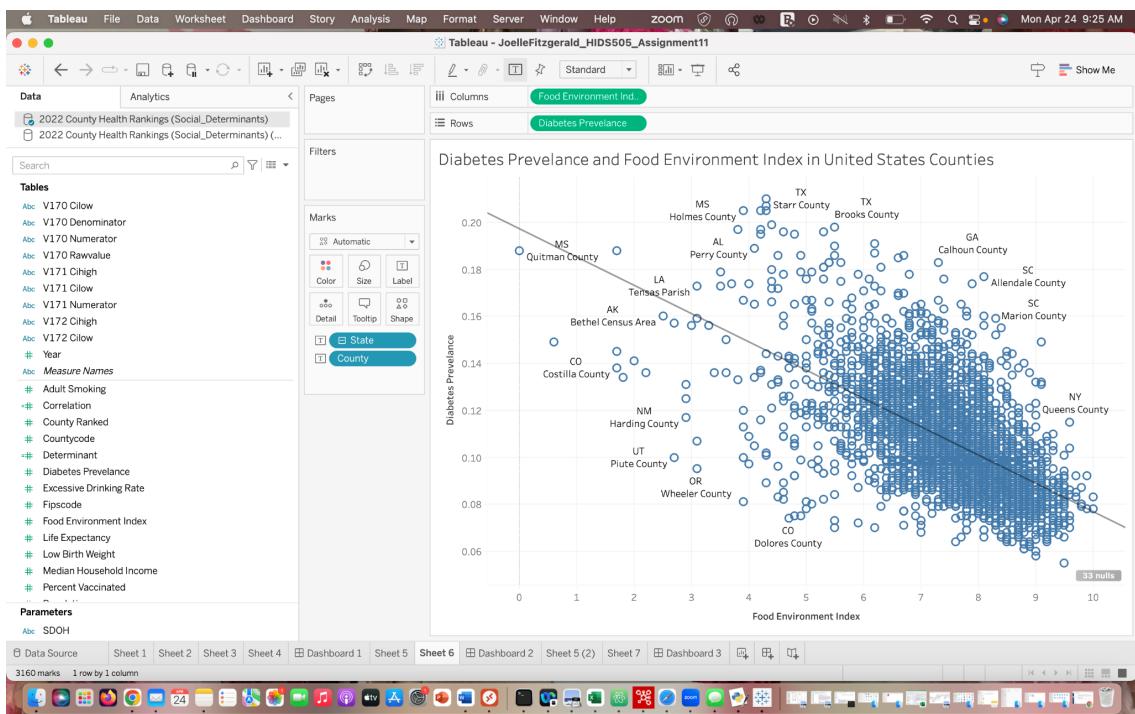
of individuals, families, and communities. Sexually Transmitted Infections (STIs) can have severe reproductive health complications, particularly for young women. There are approximately 3 million unintended pregnancies in the US each year. Rates are highest among poor, minority, young, and cohabiting women. Unintended pregnancy is associated with delayed prenatal care which can lead to poor fetal health. The teen pregnancy rate is falling, but as of 2016, there were still over 200,000 teen pregnancies annually. Pregnant teens are less likely than older women to receive recommended prenatal care, and more likely to have pre-term or low birthweight babies. Teen mothers are often at increased risk for STIs and repeat pregnancies, are less likely than their peers to complete high school, and more likely to live below the poverty level and rely on public assistance. Risky sexual behaviors can have high economic costs for communities and individuals. STIs cost the US health care system almost \$16 billion every year¹ and, in 2010, the costs of teen childbearing were estimated at over \$9 billion. Communities, schools, and families can work together to adopt and implement policies and programs that reduce STIs and unplanned pregnancies, to the benefit of all.

In Dashboard 1, I wanted to analyze food insecurity and food environment index scores (on a scale of 0 to 10, a score of 10 being the best) compared to the sexual health trends of United States (US) counties. I found that counties with low food environment index scores also correlated with high teen pregnancies, STI incidences, and low birth weight rate in infants. Subsequently, food insecurity could be an important item to address in US counties that have poor sexual health such as Quitman County in Mississippi. Providing access to healthy food options may positively affect teen pregnancy rates or the health of teen pregnancies in general, and therefore, lessen low birth weight rates in infants as the health of the mother is supported by basic nutrition needs during and before pregnancy. Lacking consistent access to food is related to negative health outcomes such as weight gain, premature mortality, asthma, and activity limitations, as well as increased health care costs. These consequences can lead to a cascade of poor health management increasing risk for poor health behaviors including poor sexual health behaviors. Dashboard 1 is a good visual representation of this cascade of how basic necessities such as access to healthy food options may have a greater effect on an individual's health behaviors and risk for poor health outcomes.

Dashboard 2 -

Diabetes Prevalence and Food Insecurity Trends in United States Counties





Using a United States map to understand the distribution of food environment indexes and corresponding diabetes prevalence scores. The geographical map highlighted (in red) areas where the food index score for a given county was low, indicative of poor healthy food options and scarcity of available grocery stores within a certain distance of residences. As you can see

above, highly populated areas such as metropolitan cities have a higher food index score while rural areas have low (red) food environment index scores. Understanding the distribution of food insecurity in US counties, I looked into correlation of food environment index and diabetes prevalence as it is known that poor food choices (as discussed above) can lead to poor health outcomes such as diabetes mellitus. By comparing diabetes prevalence and food environment index scores of US counties, I found a negative correlation between diabetes prevalence and food index scores indicating that a low food index score may be correlated with a higher diabetes prevalence and poor health outcomes. I noticed in my analysis that Quitman county (as highlighted in Dashboard 1) also had a high diabetes prevalence and a low food environment index score (as seen in Dashboard 1). This observation is congruent with the University of Wisconsin Population Health Institution and Country Health Rankings observations for social determinants of health for any given population. When basic needs such as food, water, and shelter aren't met, the population's health suffers - hence why Quitman county - a rural and underserved population has a higher incidence of poor health outcomes than large metropolitan counties like Queens county in New York.

Dashboard 3 - Food Environment Index among Synthea Diabetes Patients

Tableau - Book1

Connections:

- 34.138.243.178 PostgreSQL
- BigQuery Google BigQuery

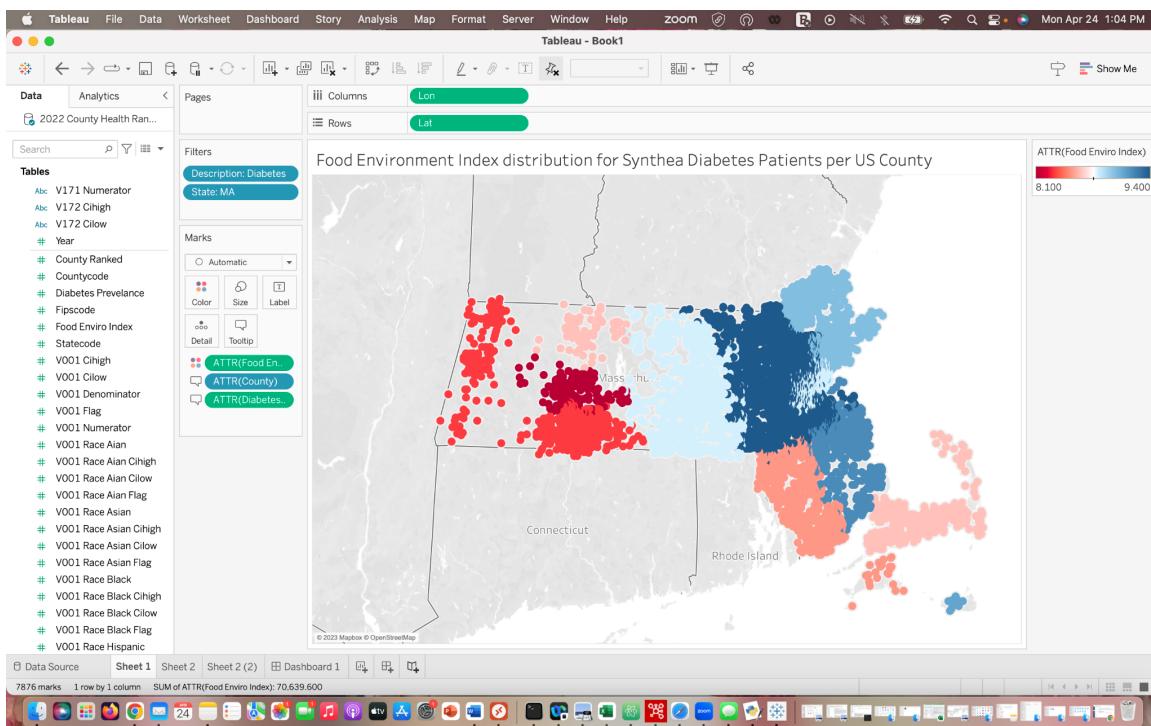
Database: synthea_covid

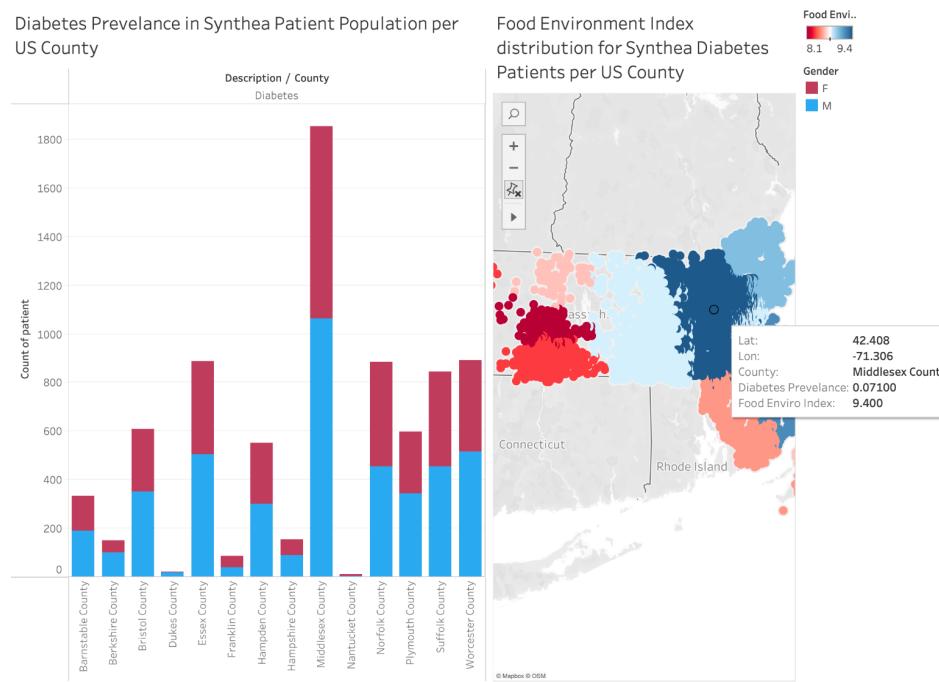
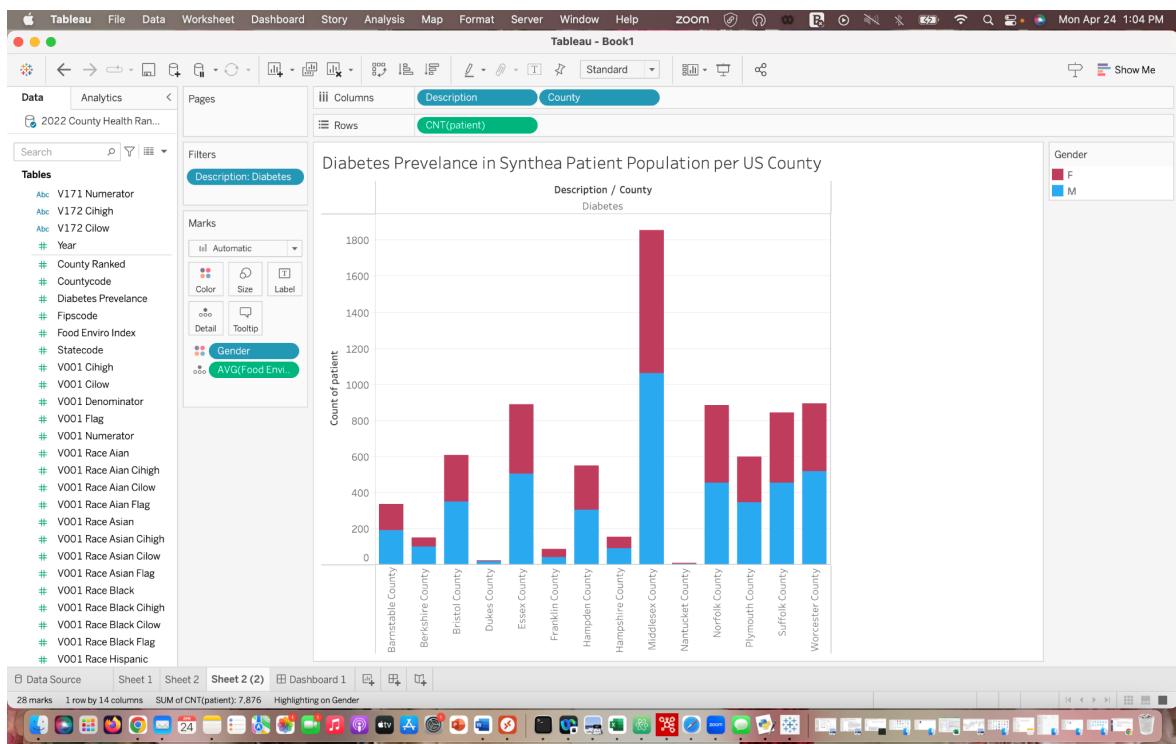
Table:

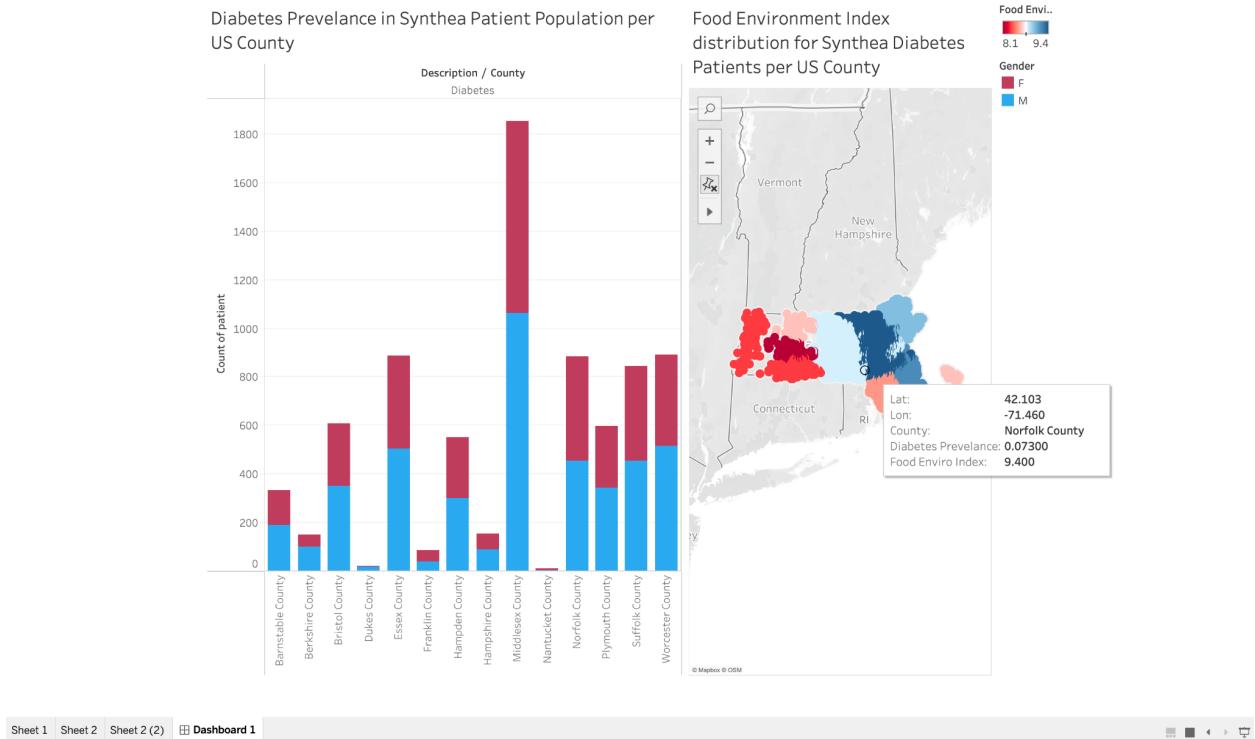
- a1c
- allergies
- bmi
- careplans
- conditions
- devices
- diabete
- encounters
- foreign_table
- imaging_studies
- immunizations
- medications
- new
- observations
- organizations
- New Custom SQL
- New Union
- New Table E... Go to Worksheet

How do relationships differ from joins? Learn more

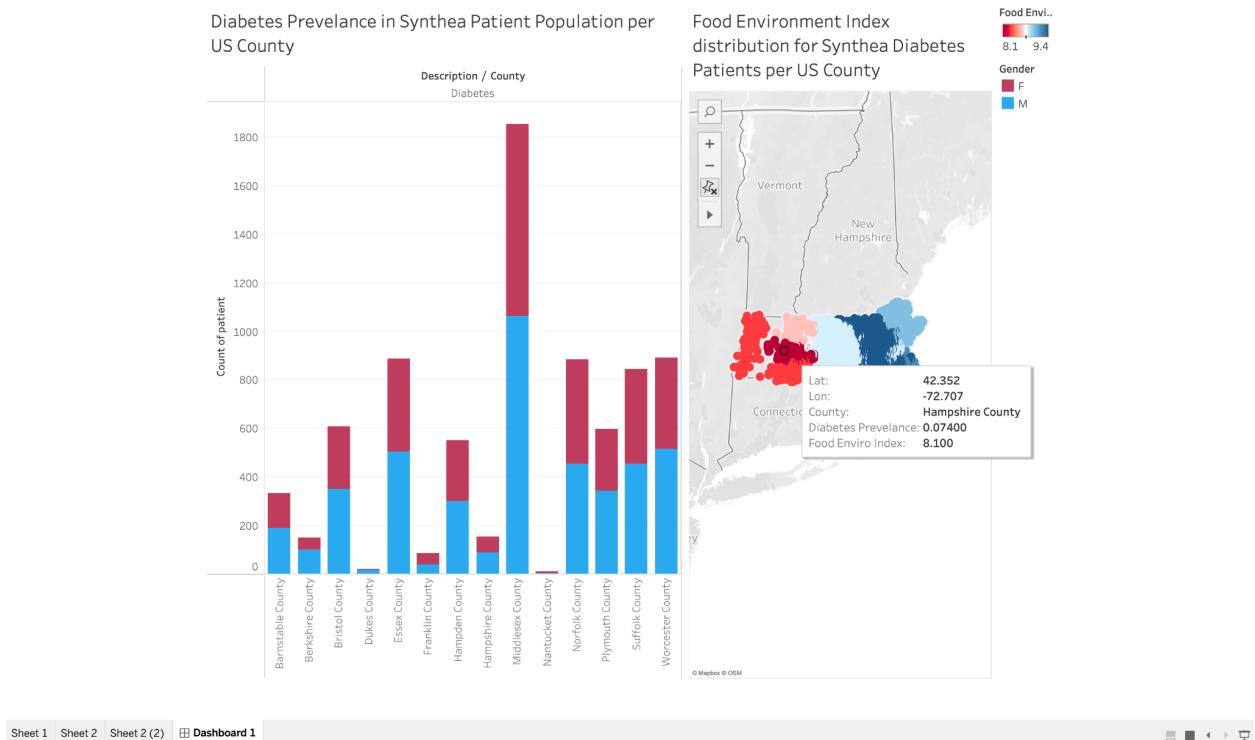
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	Id (Conditions)	Start	Stop	conditions	Patient	conditions
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3.00	3/1/2020	3/30/2020	1ff7f10f-a204-4bb1-aa72-dd7...	60584c6a-e26b-4176-a660-8...		
4.00	3/1/2020	3/1/2020	1ff7f10f-a204-4bb1-aa72-dd7...	60584c6a-e26b-4176-a660-8...		
5.00	3/1/2020	3/30/2020	1ff7f10f-a204-4bb1-aa72-dd7...	60584c6a-e26b-4176-a660-8...		
6.00	2/12/2020	2/26/2020	9bcf6ed5-d808-44af-98a0-7...	5d9dfe80-7edf-4181-9753-7...		
7.00	3/13/2020	4/14/2020	9hcf6er15-nR0R-44af-98a0-7...	a78e78rf9-33hb-40hc-9a42-r...		







Sheet 1 | Sheet 2 | Sheet 2 (2) | Dashboard 1



Sheet 1 | Sheet 2 | Sheet 2 (2) | Dashboard 1

Combining County Health Rankings and the Synthea Covid dataset, I analyzed the food index compared to diabetes prevalence for diabetic synthea patients. Through my analysis of geographic location and patient count, I found that the average food environment index for counties where synthea patients reside fell between 8.1 and 9.4, which is indicative of nutritional food conditions/options where a grocery store or healthy food options are close in proximity to patients. Looking at the count of patients diagnosed with diabetes within the synthea dataset, it is interesting to note that a higher diabetes patient count in a county does not light up as red on the geographical map or have a high diabetes prevalence score (as seen when hovering over the dashboard). This is important to note because rural counties, where there is a low patient count and a low food environment index, show more opportunity for health outcome improvement as patients are diagnosed with a chronic condition like diabetes but may not have the resources to manage their condition like healthy food choices.